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EXAMINER	
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ART UNIT	**PAPER NUMBER**
2186	

DATE MAILED: 10/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/817,308	SCHMIDT ET AL.	
	Examiner	Art Unit	
	Lev I. Iwashko	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 June 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-46* is/are pending in the application.

4a) Of the above claim(s) *3,4,16 and 17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-2, 5-15, and 18-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6/18/04, 1/24/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Amended Claims 1, 5, 14, and 18 have been noted.

2. Cancelled Claims 3-4 and 16-17 have been noted.

3. Claims 1-2, 5-15, and 18-46 stand rejected.

Claim Rejections - 35 USC § 102

4. The following are quotations of the appropriate paragraphs of 35 U.S.C. 102(e) that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. 1, 7-9, 13, 27, 30-31, 33-37, 40-41, and 43-46 are rejected under U.S.C. 102(e) as being anticipated by Grigorovitch et al. (US PG Pub 2005/0066063 A1).

Claim 1. (AMENDED) A method for reading information from an optical storage medium, comprising: *(Section 0032, lines 2-7 – State the following: "For example, and without limitation, the data storage module 218 may be composed of one or more nonvolatile memory devices, such as magnetic*

composed of one or more nonvolatile memory devices, such as magnetic or optical storage devices, magneto optical storage devices, nonvolatile RAM, or other type of nonvolatile storage devices")

- providing a cache memory having multiple cache segments; *(Section 0034, lines 1-10 – State the following: "The media cache module 212 provides intermediate data structures for a received streaming media file. In particular, the media cache module 212 creates in one or more computer-readable media five types of data structures, a media cache stream, a media cache segment, a media cache header segment, a byte cache index segment, and a byte cache data segment. In operation, the media cache module 212 creates a single media cache header segment and a number of media cache streams and media cache segments for each media file that is received")*
- receiving a request for information stored on the optical storage medium; *(Section 0056, lines 1-5 – State the following: "Following the creation of the cache file a request description operation 516 requests a description of the streaming media file from the server device. A store description operation 518 then receives and stores the streaming media file description in the created cache file")*
- determining whether the requested information is stored in one of the cache segments; *(Section 0056, lines 12-17 – State the following: "A stream determination operation 522 then determines if corresponding media cache stream exists in the cache file for the selected stream. That is, the stream determination operation 522 determines whether a media cache stream having the same type and bit rate as the selected stream is present in the cache file")*
- retrieving the requested information from said one of the cache segments if the information is determined to be stored in the cache memory; and retrieving the requested information from the optical storage medium itself if the information is determined not to be stored

in the cache memory. *(Section 0029, lines 4-11 – State the following: "For example, in accordance with one embodiment, in response to receiving a request from the streaming media player 206 for all or part of a particular streaming media presentation, the networking module 208 determines whether the request can be satisfied by retrieving the requested data from a previously stored cache file 216, or whether the requested data needs to be retrieved from a server device")*

- wherein the cache memory includes a first group of at least one cache segment dedicated to handling a first type of information, and a second group of at least one cache segment dedicated to handling a second type of information and *(Section 0034, lines 1-10 – State the following: "The media cache module 212 provides intermediate data structures for a received streaming media file. In particular, the media cache module 212 creates in one or more computer-readable media five types of data structures, a media cache stream, a media cache segment, a media cache header segment, a byte cache index segment, and a byte cache data segment. In operation, the media cache module 212 creates a single media cache header segment and a number of media cache streams and media cache segments for each media file that is received")*
- wherein the first type of information pertains to information that is designated for retrieval in a streaming transfer mode, and the second type of information pertains to information that is designated for retrieval in a bulk transfer mode. *(Section 0003, lines 5-24 – State the following: "For example, a given portion or stream of video may be stored in a multiple bit rate encoded streaming media file in six different video streams, each stream being encoded at a different bit rate. When a client requests the streaming media file from the server, a determination is then made as to the bandwidth of the link between*

the server and the client. One of the six video streams and an audio stream are then selected for transmission to the client, based on predetermined bandwidth criteria. For example, the video and audio streams may be selected such that their combined bit rates are less than a predetermined percentage of the available link bandwidth. If, at some point in the streaming process, the link bandwidth between the server and the client increases or decreases, a different combination of audio and video streams is then selected to meet the predetermined bandwidth criteria. This type of "stream selection" from a multi-bit rate encoded streaming media file based on available bandwidth is commonly referred to as "intelligent streaming")

Claim 3. (Cancelled)

Claim 4. (Cancelled)

Claim 7. The method according to claim 1, when the requested information is retrieved from said one cache segment, the method further comprising:

- moving a pointer associated with said one cache segment ahead to define free cache space; *(Section 0049, lines 8-12 – State the following: "In the case where the number of free data pages exceeds the number of free data pages that can be specified in the free page record field 447, the first external block ID includes a pointer to a page that includes a data structure identifying additional free data pages")*
- pre-fetching information from the optical storage medium; and filling the pre-fetched information into the free cache space of said one cache segment. *(Section 0042, lines 13-21 – State the following: "a previous segment identifier that specifies a media cache segment, if any, immediately preceding the media cache segment in the media cache stream; a next segment identifier that specifies a media cache segment, if any, immediately succeeding the media cache segment in the media*

cache stream, and a segment data type identifier that specifies the type of data (e.g. audio, video, etc.) included in the media cache segment")

Claim 8. The method according to claim 7, wherein the pre-fetching is performed at a time in which a drive mechanism is not otherwise engaged performing other tasks. *(Section 0078, lines 8-13 – State the following: "For purposes of illustration, application programs and other executable program components such as the operating system are illustrated herein as discrete blocks, although it is recognized that such programs and components may reside at various times in different storage components of the computing device 702, and are executed by the data processor(s) of the computer")*

Claim 9. The method according to claim 7, wherein the filling proceeds in circular manner by wrapping around from an end of said one cache segment to a beginning of said one cache segment. *(Section 0042, lines 13-21 – State the following: "a previous segment identifier that specifies a media cache segment, if any, immediately preceding the media cache segment in the media cache stream; a next segment identifier that specifies a media cache segment, if any, immediately succeeding the media cache segment in the media cache stream, and a segment data type identifier that specifies the type of data (e.g. audio, video, etc.) included in the media cache segment")*

Claim 13. A computer readable medium including machine readable instructions for implementing each of the receiving, determining, retrieving information from the cache memory, and retrieving information from the optical storage medium of claim 1. *(Section 0079, lines 1-9 – State the following: "Various modules and techniques may be described herein in the general context of computer-executable instructions, such as program modules, executed by one or more computers or other devices. Generally, program modules include routines, programs, objects, components, data structures, etc. that perform particular tasks or implement particular abstract data*

types. Typically, the functionality of the program modules may be combined or distributed as desired in various embodiments")

Claim 17. (Cancelled)

Claim 27. A method for reading information from a storage medium, comprising:

- providing a cache memory having multiple cache segments, *(Section 0034, lines 1-10 – State the following: "The media cache module 212 provides intermediate data structures for a received streaming media file. In particular, the media cache module 212 creates in one or more computer-readable media five types of data structures, a media cache stream, a media cache segment, a media cache header segment, a byte cache index segment, and a byte cache data segment. In operation, the media cache module 212 creates a single media cache header segment and a number of media cache streams and media cache segments for each media file that is received")*
- wherein the cache memory includes a first group of at least one cache segment dedicated to handling a first type of information designated for retrieval in a streaming transfer mode, and a second group of at least one cache segment dedicated to handling a second type of information designated for retrieval in a bulk transfer mode; *(Section 0003, lines 5-24 – State the following: "For example, a given portion or stream of video may be stored in a multiple bit rate encoded streaming media file in six different video streams, each stream being encoded at a different bit rate. When a client requests the streaming media file from the server, a determination is then made as to the bandwidth of the link between the server and the client. One of the six video streams and an audio stream are then selected for transmission to the client, based on predetermined bandwidth criteria. For example, the video and audio streams may be selected such that their combined bit rates are less than a predetermined percentage of the available link bandwidth. If, at some point in the streaming process,*

the link bandwidth between the server and the client increases or decreases, a different combination of audio and video streams is then selected to meet the predetermined bandwidth criteria. This type of "stream selection" from a multi-bit rate encoded streaming media file based on available bandwidth is commonly referred to as "intelligent streaming")

- receiving a request for information stored on the storage medium; *(Section 0056, lines 1-5 – State the following: "Following the creation of the cache file a request description operation 516 requests a description of the streaming media file from the server device. A store description operation 518 then receives and stores the streaming media file description in the created cache file")*
- determining whether the requested information is stored in one of the groups of cache segments; retrieving the requested information from said one of the groups of cache segments if the information is determined to be stored in the cache memory; *(Section 0056, lines 12-17 – State the following: "A stream determination operation 522 then determines if corresponding media cache stream exists in the cache file for the selected stream. That is, the stream determination operation 522 determines whether a media cache stream having the same type and bit rate as the selected stream is present in the cache file")*
- and retrieving the requested information from the storage medium itself if the information is determined not to be stored in the cache memory. *(Section 0029, lines 4-11 – State the following: "For example, in accordance with one embodiment, in response to receiving a request from the streaming media player 206 for all or part of a particular streaming media presentation, the networking module 208 determines whether the request can be satisfied by retrieving the*

requested data from a previously stored cache file 216, or whether the requested data needs to be retrieved from a server device")

Claim 30. A computer readable medium including machine readable instructions for implementing each of the receiving, determining, retrieving information from the cache memory, and retrieving information from the storage medium of claim 27. *(Section 0079, lines 1-9 – State the following: "Various modules and techniques may be described herein in the general context of computer-executable instructions, such as program modules, executed by one or more computers or other devices. Generally, program modules include routines, programs, objects, components, data structures, etc. that perform particular tasks or implement particular abstract data types. Typically, the functionality of the program modules may be combined or distributed as desired in various embodiments")*

Claim 31. A method for reading information from a storage medium, comprising:

- providing a cache memory; *(Section 0034, lines 1-10 – State the following: "The media cache module 212 provides intermediate data structures for a received streaming media file. In particular, the media cache module 212 creates in one or more computer-readable media five types of data structures, a media cache stream, a media cache segment, a media cache header segment, a byte cache index segment, and a byte cache data segment. In operation, the media cache module 212 creates a single media cache header segment and a number of media cache streams and media cache segments for each media file that is received")*
- receiving a request for information stored on the storage medium; *(Section 0056, lines 1-5 – State the following: "Following the creation of the cache file a request description operation 516 requests a description of the streaming media file from the server device. A store description operation 518 then receives and stores the streaming media file description in the created cache file")*

- determining whether the requested information is stored in the cache memory; *(Section 0056, lines 12-17 – State the following: "A stream determination operation 522 then determines if corresponding media cache stream exists in the cache file for the selected stream. That is, the stream determination operation 522 determines whether a media cache stream having the same type and bit rate as the selected stream is present in the cache file")*
- retrieving the requested information from the cache memory if the information is determined to be stored in the cache memory, including: moving a pointer associated with the cache memory ahead to define free cache space; *(Section 0049, lines 8-12 – State the following: "In the case where the number of free data pages exceeds the number of free data pages that can be specified in the free page record field 447, the first external block ID includes a pointer to a page that includes a data structure identifying additional free data pages")*
- pre-fetching information from the storage medium; and filling the pre-fetched information in the free cache space of the cache memory; *(Section 0042, lines 13-21 – State the following: "a previous segment identifier that specifies a media cache segment, if any, immediately preceding the media cache segment in the media cache stream; a next segment identifier that specifies a media cache segment, if any, immediately succeeding the media cache segment in the media cache stream, and a segment data type identifier that specifies the type of data (e.g. audio, video, etc.) included in the media cache segment")*
- and retrieving the requested information from the storage medium itself if the information is determined not to be stored in the cache memory. *(Section 0029, lines 4-11 – State the following: "For example, in accordance with one embodiment, in response to receiving a request from the streaming media player 206 for all or part of a particular streaming media presentation, the networking module 208*

determines whether the request can be satisfied by retrieving the requested data from a previously stored cache file 216, or whether the requested data needs to be retrieved from a server device")

Claim 33. The method according to claim 31, wherein the pre-fetching is performed at a time in which a drive mechanism is not otherwise engaged performing other tasks. *(Section 0078, lines 8-13 – State the following: "For purposes of illustration, application programs and other executable program components such as the operating system are illustrated herein as discrete blocks, although it is recognized that such programs and components may reside at various times in different storage components of the computing device 702, and are executed by the data processor(s) of the computer")*

Claim 34. The method according to claim 31, wherein the filling proceeds in circular manner by wrapping around from an end of the cache memory to a beginning of the cache memory.

Claim 35. The method according to claim 31, wherein the storage medium is an optical storage medium. *(Section 0032, lines 2-7 – State the following: "For example, and without limitation, the data storage module 218 may be composed of one or more nonvolatile memory devices, such as magnetic or optical storage devices, magneto optical storage devices, nonvolatile RAM, or other type of nonvolatile storage devices")*

Claim 36. A computer readable medium including machine readable instructions for implementing each of the receiving, determining, retrieving information from the cache memory, and retrieving information from the storage medium of claim 31. *(Section 0079, lines 1-9 – State the following: "Various modules and techniques may be described herein in the general context of computer-executable instructions, such as program modules, executed by one or more computers or other devices. Generally, program modules include routines, programs, objects, components, data structures, etc. that perform particular tasks or implement particular abstract data*

types. Typically, the functionality of the program modules may be combined or distributed as desired in various embodiments")

Claim 37. An apparatus for reading information from a storage medium, comprising:

- a cache memory having multiple cache segments, *(Section 0034, lines 1-10 – State the following: "The media cache module 212 provides intermediate data structures for a received streaming media file. In particular, the media cache module 212 creates in one or more computer-readable media five types of data structures, a media cache stream, a media cache segment, a media cache header segment, a byte cache index segment, and a byte cache data segment. In operation, the media cache module 212 creates a single media cache header segment and a number of media cache streams and media cache segments for each media file that is received")*
- wherein the cache memory includes a first group of at least one cache segment dedicated to handling a first type of information designated for retrieval in a streaming transfer mode, and a second group of at least one cache segment dedicated to handling a second type of information designated for retrieval in a bulk transfer mode; *(Section 0003, lines 5-24 – State the following: "For example, a given portion or stream of video may be stored in a multiple bit rate encoded streaming media file in six different video streams, each stream being encoded at a different bit rate. When a client requests the streaming media file from the server, a determination is then made as to the bandwidth of the link between the server and the client. One of the six video streams and an audio stream are then selected for transmission to the client, based on predetermined bandwidth criteria. For example, the video and audio streams may be selected such that their combined bit rates are less than a predetermined percentage of the available link bandwidth. If, at some point in the streaming process, the link bandwidth between the server and the client increases or*

decreases, a different combination of audio and video streams is then selected to meet the predetermined bandwidth criteria. This type of "stream selection" from a multi-bit rate encoded streaming media file based on available bandwidth is commonly referred to as "intelligent streaming")

- cache management logic, including: *(Section 0036, lines 1-5 – State the following: "When a stream is received by the media cache module 212, the data within the received stream is stored in a media cache segment within (i.e., logically associated with) a media cache stream of the same type and bit rate as the received stream")*
- logic configured to receive a request for information stored on the storage medium; *(Section 0056, lines 1-5 – State the following: "Following the creation of the cache file a request description operation 516 requests a description of the streaming media file from the server device. A store description operation 518 then receives and stores the streaming media file description in the created cache file")*
- logic configured to determine whether the requested information is stored in one of the groups of cache segments; *(Section 0056, lines 12-17 – State the following: "A stream determination operation 522 then determines if corresponding media cache stream exists in the cache file for the selected stream. That is, the stream determination operation 522 determines whether a media cache stream having the same type and bit rate as the selected stream is present in the cache file")*
- logic configured to retrieve the requested information from said one of the groups of cache segments if the information is determined to be stored in the cache memory; and logic configured to retrieve the requested information from the storage medium itself if the information is determined not to be stored in the cache memory. *(Section 0029, lines 4-11 – State the following: "For example, in*

accordance with one embodiment, in response to receiving a request from the streaming media player 206 for all or part of a particular streaming media presentation, the networking module 208 determines whether the request can be satisfied by retrieving the requested data from a previously stored cache file 216, or whether the requested data needs to be retrieved from a server device")

Claim 40. A computer readable medium including machine readable information for implementing the cache memory and each of the logic recited in claim 37. *(Section 0071, lines 1-4 – State the following: "The disk drives and their associated computer-readable media provide non-volatile storage of computer-readable instructions, data structures, program modules, and other data for computer 702")*

Claim 41. An apparatus for reading information from a storage medium, comprising:

- a cache memory; *(Section 0034, lines 1-10 – State the following: "The media cache module 212 provides intermediate data structures for a received streaming media file. In particular, the media cache module 212 creates in one or more computer-readable media five types of data structures, a media cache stream, a media cache segment, a media cache header segment, a byte cache index segment, and a byte cache data segment. In operation, the media cache module 212 creates a single media cache header segment and a number of media cache streams and media cache segments for each media file that is received")*
- cache management logic, including: *(Section 0036, lines 1-5 – State the following: "When a stream is received by the media cache module 212, the data within the received stream is stored in a media cache segment within (i.e., logically associated with) a media cache stream of the same type and bit rate as the received stream")*
- logic configured to receive a request for information stored on the storage medium; *(Section 0056, lines 1-5 – State the following:*

"Following the creation of the cache file a request description operation 516 requests a description of the streaming media file from the server device. A store description operation 518 then receives and stores the streaming media file description in the created cache file")

- logic configured to determine whether the requested information is stored in the cache memory; *(Section 0056, lines 12-17 – State the following: "A stream determination operation 522 then determines if corresponding media cache stream exists in the cache file for the selected stream. That is, the stream determination operation 522 determines whether a media cache stream having the same type and bit rate as the selected stream is present in the cache file")*
- logic configured to retrieve the requested information from the cache memory if the information is determined to be stored in the cache memory, including: logic configured to move a pointer associated with the cache memory ahead to define free cache space; *(Section 0049, lines 8-12 – State the following: "In the case where the number of free data pages exceeds the number of free data pages that can be specified in the free page record field 447, the first external block ID includes a pointer to a page that includes a data structure identifying additional free data pages")*
- logic configured to pre-fetch information from the storage medium; and logic configured to fill the pre-fetched information in the free cache space of the cache memory; *(Section 0042, lines 13-21 – State the following: "a previous segment identifier that specifies a media cache segment, if any, immediately preceding the media cache segment in the media cache stream; a next segment identifier that specifies a media cache segment, if any, immediately succeeding the media cache segment in the media cache stream, and a segment data type identifier that specifies the type of data (e.g. audio, video, etc.) included in the media cache segment")*

- and logic configured to retrieve the requested information from the storage medium itself if the information is determined not to be stored in the cache memory. *(Section 0029, lines 4-11 – State the following: "For example, in accordance with one embodiment, in response to receiving a request from the streaming media player 206 for all or part of a particular streaming media presentation, the networking module 208 determines whether the request can be satisfied by retrieving the requested data from a previously stored cache file 216, or whether the requested data needs to be retrieved from a server device")*

Claim 43. The apparatus according to claim 41, wherein the logic for pre-fetching is configured to perform its operation at a time in which a drive mechanism is not otherwise engaged performing other tasks. *(Section 0078, lines 8-13 – State the following: "For purposes of illustration, application programs and other executable program components such as the operating system are illustrated herein as discrete blocks, although it is recognized that such programs and components may reside at various times in different storage components of the computing device 702, and are executed by the data processor(s) of the computer")*

Claim 44. The apparatus according to claim 41, wherein the logic for filling is configured to proceed in a circular manner by wrapping around from an end of the cache memory to a beginning of the cache memory. *(Section 0042, lines 13-21 – State the following: "a previous segment identifier that specifies a media cache segment, if any, immediately preceding the media cache segment in the media cache stream; a next segment identifier that specifies a media cache segment, if any, immediately succeeding the media cache segment in the media cache stream, and a segment data type identifier that specifies the type of data (e.g. audio, video, etc.) included in the media cache segment")*

Claim 45. The apparatus according to claim 41, wherein the storage medium is an optical storage medium. *(Section 0032, lines 2-7 – State the following: "For example, and without limitation, the data storage module 218 may be composed of one or more nonvolatile memory devices, such as magnetic or optical storage devices, magneto optical storage devices, nonvolatile RAM, or other type of nonvolatile storage devices")*

Claim 46. A computer readable medium including machine readable information for implementing the cache memory and each of the logic recited in claim 41. *(Section 0071, lines 1-4 – State the following: "The disk drives and their associated computer-readable media provide non-volatile storage of computer-readable instructions, data structures, program modules, and other data for computer 702")*

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 2, 15, 32, and 42 are rejected under 35 U.S.C.103(a) as being unpatentable over Grigorovitch et al. as applied to claims 1, 14, 31 and 41 above, further in view of Dye et al. (US PG Pub 2002/0135585 A1).

Grigorovitch teaches the limitations of claims 1, 14, 31 and 41 for the reasons above.

Grigorovitch 's invention differs from the claimed invention in that there is no specific reference to a game application.

Grigorovitch fails to teach claims 2, 15, 32, and 42, which state "The method according to claim 1 (or: 14, 31, 41), wherein the retrieved information pertains to a game application." However, Dye discloses "The present invention is also preferably used with game application programming interfaces (APIs) such as Reality Lab from Rendermorphics" (Section 0441, lines 9-11). It would have been obvious to one of ordinary skill in the art, having the teachings of Grigorovitch and Dye before him at the time the invention was made, to combine the "Sparse Caching for Streaming Media" of Grigorovitch and Dye's "Video controller system with screen caching" so that the retrieved information would pertain to a game application, which would make the invention applicable to a more diverse and universal.

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grigorovitch et al., further in view of Gavin (US PG Pub 2003/0109313 A1) and Bae et al. (JP PG Pub 2001/203995 A).

Grigorovitch teaches the majority of Claim 14 as follows:

Claim 14. (AMENDED) An apparatus for reading information from an optical storage medium, comprising:

- a cache memory having multiple cache segments; *(Section 0034, lines 1-10 – State the following: "The media cache module 212 provides intermediate data structures for a received streaming media file. In particular, the media cache module 212 creates in one or more computer-readable media five types of data structures, a media cache stream, a media cache segment, a media cache header segment, a byte cache index segment, and a byte cache data segment. In operation, the media cache module 212 creates a single media cache header segment and a number of media cache streams and media cache segments for each media file that is received")*

- cache management logic, including: *(Section 0036, lines 1-5 – State the following: "When a stream is received by the media cache module 212, the data within the received stream is stored in a media cache segment within (i.e., logically associated with) a media cache stream of the same type and bit rate as the received stream")*
- logic configured to receive a request for information stored on the optical storage medium; *(Section 0056, lines 1-5 – State the following: "Following the creation of the cache file a request description operation 516 requests a description of the streaming media file from the server device. A store description operation 518 then receives and stores the streaming media file description in the created cache file")*
- logic configured to determine whether the requested information is stored in one of the cache segments; *(Section 0056, lines 12-17 – State the following: "A stream determination operation 522 then determines if corresponding media cache stream exists in the cache file for the selected stream. That is, the stream determination operation 522 determines whether a media cache stream having the same type and bit rate as the selected stream is present in the cache file")*
- logic configured to retrieve the requested information from said one of the cache segments if the information is determined to be stored in the cache memory; and logic configured to retrieve the requested information from the optical storage medium itself if the information is determined not to be stored in the cache memory. *(Section 0029, lines 4-11 – State the following: "For example, in accordance with one embodiment, in response to receiving a request from the streaming media player 206 for all or part of a particular streaming media presentation, the networking module 208 determines whether the request can be satisfied by retrieving the requested data from a previously stored cache file 216, or whether the requested data needs to be retrieved from a server device")*

- wherein the first type of information pertains to information that is designated for retrieval in a streaming transfer mode, and the second type of information pertains to information that is designated for retrieval in a bulk transfer mode, and *(Section 0003, lines 5-24 – State the following: "For example, a given portion or stream of video may be stored in a multiple bit rate encoded streaming media file in six different video streams, each stream being encoded at a different bit rate. When a client requests the streaming media file from the server, a determination is then made as to the bandwidth of the link between the server and the client. One of the six video streams and an audio stream are then selected for transmission to the client, based on predetermined bandwidth criteria. For example, the video and audio streams may be selected such that their combined bit rates are less than a predetermined percentage of the available link bandwidth. If, at some point in the streaming process, the link bandwidth between the server and the client increases or decreases, a different combination of audio and video streams is then selected to meet the predetermined bandwidth criteria. This type of "stream selection" from a multi-bit rate encoded streaming media file based on available bandwidth is commonly referred to as "intelligent streaming")*

Grigorovitch 's invention differs from the claimed invention in that there is no specific reference to a audio or level load information.

Grigorovitch fails to teach the amended limitation of Claim 14 which states "The method according to claim 4 (or: 17, 27, 37), wherein the first type of information pertains to audio game information, and the second type of information pertains to game level load information." However, Gavin discloses "A virtual world represented by game software often includes more than one environment or level of game play. A character, controllable by the user, typically

begins the game in one environment or level, and then progresses to other, often more challenging, environments or levels. Typically there is a pause in game play while the game transitions from one environment to another. The game screen may momentarily be blank or a "loading" screen may appear while the new environment or level is loaded from the game disc to the game system's memory. Loading times vary by game, but games with complex environments and characters may require significant loading times. Whether the loading time is short or significant, the flow of game play is interrupted" (Section 0005, lines 1-14). Bae further states "This game service system which reproduces video and audio information includes a transmitter comprising a multiplexing part 106 which outputs video and audio information, and a game program and game information as a transport stream and a transmission part 110 which modulates the transport stream by channel coding, and then amplify and transmits it and a receiver comprising a tuning part 201 which receives the video and audio information, and game program and game information and selects video and audio information of a desirable channel or the game program and a common interface module 204 for the game which downloads the game program and processes the game information after demodulating the selected game program and game information and correcting errors" (Abstract, lines 1-14). It would have been obvious to one of ordinary skill in the art, having the teachings of Grigorovitch, Gavin and Bae before him at the time the invention was made, to combine the "Sparse Caching for Streaming Media" of Grigorovitch, Gavin's "System and method for dynamically loading game software for smooth game play", and Bae's "Game Service System" so that there would be two types of information each pertaining to either audio or level load information, so that the system would operate more efficiently and avoid bottlenecking.

9. Claims 5, 18, 28, and 38 are rejected under 35 U.S.C.103(a) as being unpatentable over Grigorovitch et al. as applied to claims 1, 17, 27, and 37 above, further in view of Gavin (US PG Pub 2003/0109313 A1) and Bae et al. (JP PG Pub 2001/203995 A).

Grigorovitch teaches the limitations of claims 1, 17, 27, and 37 for the reasons above.

Grigorovitch 's invention differs from the claimed invention in that there is no specific reference to a audio or level load information.

Grigorovitch fails to teach claims 5, 18, 28, and 38, which state "The method according to claim 4 (or: 17, 27, 37), wherein the first type of information pertains to audio game information, and the second type of information pertains to game level load information." However, Gavin discloses "A virtual world represented by game software often includes more than one environment or level of game play. A character, controllable by the user, typically begins the game in one environment or level, and then progresses to other, often more challenging, environments or levels. Typically there is a pause in game play while the game transitions from one environment to another. The game screen may momentarily be blank or a "loading" screen may appear while the new environment or level is loaded from the game disc to the game system's memory. Loading times vary by game, but games with complex environments and characters may require significant loading times. Whether the loading time is short or significant, the flow of game play is interrupted" (Section 0005, lines 1-14). Bae further states "This game service system which reproduces video and audio information includes a transmitter comprising a multiplexing part 106 which outputs video and audio information, and a game program and game information as a transport stream and a transmission part 110 which modulates the transport stream by channel coding, and then amplify and transmits it and a

receiver comprising a tuning part 201 which receives the video and audio information, and game program and game information and selects video and audio information of a desirable channel or the game program and a common interface module 204 for the game which downloads the game program and processes the game information after demodulating the selected game program and game information and correcting errors" (Abstract, lines 1-14). It would have been obvious to one of ordinary skill in the art, having the teachings of Grigorovitch, Gavin and Bae before him at the time the invention was made, to combine the "Sparse Caching for Streaming Media" of Grigorovitch, Gavin's "System and method for dynamically loading game software for smooth game play", and Bae's "Game Service System" so that there would be two types of information each pertaining to either audio or level load information, so that the system would operate more efficiently and avoid bottlenecking.

10. Claims 2, 15, 32, and 42 are rejected under 35 U.S.C.103(a) as being unpatentable over Grigorovitch et al. as applied to claims 1, 14, 31 and 41 above, further in view of Hirao et al. (US PG Pub 2003/0041214 A1).

Grigorovitch teaches the limitations of claims 1, 14, 31 and 41 for the reasons above.

Grigorovitch 's invention differs from the claimed invention in that there is no specific reference to hint information.

Grigorovitch fails to teach claims 2, 15, 32, and 42, which state "The method according to claim 1 (or: 14, 31, 41), wherein the determining of whether the requested information is stored in one of the cache segments includes determining whether the requested information is stored in a cache segment identified in hint information received from a host system." However, Hirao discloses "When a host request is directed to data in the space X, the disk drive typically

retrieves the data within the host request, and in addition retrieves a certain amount of data preceding the host request, known as pre-read data, and an amount of data following the requested data, known as pre-fetch (Read-ahead) data. The pre-read, host request and pre-fetch data (Extended media read request in FIG. 1), are then stored in cache and registered in the cache table as New Cache data. It is apparent from FIG. 1, however, that portions of the New Cache data and portions of the cache data M and N are stored twice (in two places) in the cache buffer, which is inefficient" (Section 0006, lines 1-12). It would have been obvious to one of ordinary skill in the art, having the teachings of Grigorovitch and Hirao before him at the time the invention was made, to combine the "Sparse Caching for Streaming Media" of Grigorovitch and Hirao's "Cache control methods and apparatus for hard disk drives" so that there would be hint information which would speed up the reading and other processes, thereby increasing efficiency.

11. Claims 10-12, and 23-25 are rejected under 35 U.S.C.103(a) as being unpatentable over Grigorovitch et al. as applied to claims 1, 14, and 23 above, further in view of Cherkasova et al. (US Patent 6425057 B1) and Talbot et al. (US PG Pub 2005/0166006 A1).

Grigorovitch teaches the limitations of claims 1, 14, and 23 for the reasons above.

Grigorovitch 's invention differs from the claimed invention in that there is no specific reference to an eviction algorithm.

Grigorovitch fails to teach claims 10-12, and 23-25, which state as follows:

Claim 10. The method according to claim 1, when the requested information is retrieved from the optical storage medium, the method further comprising: determining which one of the cache segments should receive the requested information based on an eviction algorithm; flushing the determined cache segment of its current contents; and storing the information retrieved from the optical storage medium in the determined cache segment.

Claim 11. The method according to claim 10, wherein the eviction algorithm determines the cache segment to receive the requested information by identifying the cache segment which has been least recently used.

Claim 12. The method according to claim 10, wherein the eviction algorithm determines the cache segment to receive the requested information by identifying the cache segment which has been least frequently used.

Claim 23. The apparatus according to claim 14, wherein the logic for retrieving the requested information from the optical storage medium further comprises: logic configured to determine which one of the cache segments should receive the requested information based on an eviction algorithm; logic configured to flush the determined cache segment of its current contents; and logic configured to store the information retrieved from the optical storage medium in the determined cache segment.

Claim 24. The apparatus according to claim 23, wherein the eviction algorithm determines the cache segment to receive the requested information by identifying the cache segment which has been least recently used.

However, Cherkasova discloses "A second known strategy is the least-frequently-used (LFU) algorithm that replaces the object which has been accessed the least number of times. This strategy attempts to keep more popular objects and replace rarely used objects. However, some objects can build a high frequency count over a short period of time and be rarely accessed after the subject matter is no longer "hot." Such objects often remain within cache long after network performance is enhanced by retaining the documents in cache. The traditional LFU strategy does not provide any mechanism to remove such documents, leading to "cache pollution." Typical examples are objects of a Web site dedicated to a one-time, high-profile event" (Column 2, lines 39-51). Talbot also states "In such an embodiment, DRAM controller 250 may implement an eviction algorithm such as a least recently used (LRU) algorithm, for example, for evicting data from cache memory 175. In one implementation, memory controller 105 may provide explicit write back instructions to DRAM controller 250" (Section 0053, lines 7-12). It would have been obvious to one of ordinary skill in the art, having the teachings of Grigorovitch, Cherkasova and Talbot before him at the time the invention was made, to combine

the "Sparse Caching for Streaming Media" of Grigorovitch, Cherkasova's "Caching protocol method and system based on request frequency and relative storage duration" and Talbot's "System including a host connected serially in a chain to one or more memory modules that include a cache" so that there would be and eviction algorithm that would further make the system more efficient.

12. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grigorovitch et al., further in view of Gavin (US PG Pub 2003/0109313 A1) and Bae et al. (JP PG Pub 2001/203995 A).

Grigorovitch teaches the entirety of Claim 16 as follows:

> Claim 16. The apparatus according to claim 14, wherein the cache memory includes a first group of at least one cache segment dedicated to handling a first type of information, and a second group of at least one cache segment dedicated to handling a second type of information. *(Section 0034, lines 1-10 – State the following: "The media cache module 212 provides intermediate data structures for a received streaming media file. In particular, the media cache module 212 creates in one or more computer-readable media five types of data structures, a media cache stream, a media cache segment, a media cache header segment, a byte cache index segment, and a byte cache data segment. In operation, the media cache module 212 creates a single media cache header segment and a number of media cache streams and media cache segments for each media file that is received")*

13. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grigorovitch et al., further in view of Gavin (US PG Pub 2003/0109313 A1) and Bae et al. (JP PG Pub 2001/203995 A).

Grigorovitch teaches the entirety of Claim 20 as follows:

Claim 20. The apparatus according to claim 14, wherein the logic for retrieving the requested information from said one cache segment further comprises:

- logic configured to move a pointer associated with said one cache segment ahead to define free cache space; *(Section 0049, lines 8-12 – State the following: "In the case where the number of free data pages exceeds the number of free data pages that can be specified in the free page record field 447, the first external block ID includes a pointer to a page that includes a data structure identifying additional free data pages")*
- logic configured to pre-fetch information from the optical storage medium; and logic configured to store the pre-fetched information in the free cache space of said one cache segment. *(Section 0042, lines 13-21 – State the following: "a previous segment identifier that specifies a media cache segment, if any, immediately preceding the media cache segment in the media cache stream; a next segment identifier that specifies a media cache segment, if any, immediately succeeding the media cache segment in the media cache stream, and a segment data type identifier that specifies the type of data (e.g. audio, video, etc.) included in the media cache segment")*

14. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grigorovitch et al., further in view of Gavin (US PG Pub 2003/0109313 A1) and Bae et al. (JP PG Pub 2001/203995 A).

Grigorovitch teaches the entirety of Claim 21 as follows:

Claim 21. The apparatus according to claim 20, wherein the logic for pre-fetching is configured to operate at a time in which a drive mechanism is not otherwise engaged performing other tasks. *(Section 0078, lines 8-13 – State the following: "For purposes of illustration, application programs and other executable program components such as the operating system*

are illustrated herein as discrete blocks, although it is recognized that such programs and components may reside at various times in different storage components of the computing device 702, and are executed by the data processor(s) of the computer")

15. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grigorovitch et al., further in view of Gavin (US PG Pub 2003/0109313 A1) and Bae et al. (JP PG Pub 2001/203995 A).

Grigorovitch teaches the entirety of Claim 22 as follows:

Claim 22. The apparatus according to claim 20, wherein the logic for filling is configured to fill said one cache segment in a circular manner by wrapping around from an end of said one cache segment to a beginning of said one cache segment. *(Section 0042, lines 13-21 – State the following: "a previous segment identifier that specifies a media cache segment, if any, immediately preceding the media cache segment in the media cache stream; a next segment identifier that specifies a media cache segment, if any, immediately succeeding the media cache segment in the media cache stream, and a segment data type identifier that specifies the type of data (e.g. audio, video, etc.) included in the media cache segment")*

16. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grigorovitch et al., further in view of Gavin (US PG Pub 2003/0109313 A1) and Bae et al. (JP PG Pub 2001/203995 A).

Grigorovitch teaches the entirety of Claim 26 as follows:

Claim 26. A computer readable medium including machine readable information for implementing the cache memory and each of the logic recited in claim 14. *(Section 0071, lines 1-4 – State the following: "The disk drives and their associated computer-readable media provide non-volatile storage of*

computer-readable instructions, data structures, program modules, and other data for computer 702"

Response to Arguments

17. Applicant's arguments (filed June 29, 2006) with respect to claims 1-2, 5-15, and 18-46 have been considered but are moot in view of the previous, new and following rejections.

18. With regards to Claim 1, the Applicant alleges that Grigorovitch does not disclose the bold-highlighted portion of claim 1, which happens to be the original Claim 4. However, the examiner would like to point out that the stream transfer mode is fully mentioned, and there is also multi-bit rate coded streaming, which is synonymous to bulk transfer mode. "a set of counters associated respectively with each memory location and that one of the set of counters is incremented when a packet identifier match is made". The Applicant further alleges that "Stone does not each or suggest the incrementing step of claim 1". The Examiner would like to point to the fact the rejection above is a 35 U.S.C. 103(a) rejection, which allows for the combination of two prior arts to achieve the functionality of the claimed invention. Therefore, the Applicant's arguments are moot in view of the prior art.

19. With regards to Claim 31, the Applicant alleges that Grigorovitch does not disclose the bold-highlighted portion of Claim 31, which states "moving a pointer associated with the cache memory ahead to define free cache space". However, the Examiner maintains that Section 0049, lines 8-12 state the following which teaches the limitation of the claim: State the following: "In the case where the number of free data pages exceeds the number of free data pages that can be specified in the free page record field 447, the first external block ID includes a pointer to a page

that includes a data structure identifying additional free data pages". Therefore, the Applicant's arguments are moot in view of the prior art.

20. With regard to the 103(a) rejections, the Applicant alleges that Grigorovitch is not prior art due to its lack of an establishment of a prima facie case of obviousness, as well as its common assignee with the claimed invention. However, Section 706.02(l) 1 [R-3] of the MPEP states the following: The burden of establishing that subject matter is disqualified as prior art is placed on applicant once the examiner has established a prima facie case of obviousness based on the subject matter. For example, the fact that the reference and the application have the same assignee is not, by itself, sufficient evidence to disqualify the prior art under 35 U.S.C. 103(c). There must be a statement that the common ownership was "at the time the invention was made." Since the fact that Grigorovitch was shown to in fact teach the limitations of the Independent claims above, a prima facie case of obviousness was established. Therefore, the Applicant's arguments are moot in view of the prior art.

21. All Claims not mentioned either cover the same subject matter as the other independent claims, or are dependents of said claims. Therefore, these claims also stand rejected.

Conclusion

22. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lev I. Iwashko whose telephone number is (571)272-1658. The examiner can normally be reached on M-Th, from 8-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on (571)272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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